



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,679	10/13/2000	Kunio Arisaka	PM 274432 SPO-2430	7628
7590 02/26/2004 PILLSBURY WINTHROP LLP 1600 TYSONS BOULEVARD MCLEAN, VA 22102			EXAMINER HENN, TIMOTHY J	
			ART UNIT 2612	PAPER NUMBER
DATE MAILED: 02/26/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/689,679

Applicant(s)

ARISAKA, KUNIO

Examiner

Timothy J Henn

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7 and 8 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. **The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided.** The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The office notes that the current title could apply equally well to any type of shutter from mechanical to liquid crystal to electronic and any subsets thereof.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2612

4. Claims 1-3, 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over SanGregory et al. (US 5,432,576) in view of Arisaka et al. (JP 10221740A).

[claim 1]

5. In regard to claim 1, note that SanGregory et al. discloses a camera shutter comprising:

a motor having a stator including an energizing coil having a permanent magnetic rotor or a "rotary magnetic actuator" (Column 2, Lines 64-65) capable of reciprocatingly moving by a predetermined angle from an initial position corresponding to a direction in which a current is supplied to the coil (Column 2, Line 67 – Column 3, Line 3; The office notes that it is inherent for magnetic actuators to rotate a certain direction corresponding to the polarity of the current applied to the actuating coil), and having a driving pin integrally provided with the rotor and extending in parallel with a rotary shaft of the rotor (Column 2, Lines 50-52; Figure 1, Item 4a);

at least one diaphragm blade (Figure 1, Items 1 and 2) being operative to follow the driving pin (Column 2, Lines 50-55), capable of moving to a predetermined exposure regulating position when the rotor moves from the initial position (Figure 3), and operative to be returned to a fully opened position of a circular exposure aperture when the rotor returns to the initial position (Figure 2);

first forcing means capable of pushing the diaphragm blade to move the diaphragm to the exposure aperture regulating position (Column 2, Lines 50-55; Figure 1, Item 3);

at least one shutter blade (Figure 1, Items 1 and 2) capable of fully opening the exposure aperture when the rotor is in the initial position (Figure 2), and capable of operating together with the driving pin to open and close the exposure aperture while the rotor reciprocatingly moves (Column 2, Lines 50-55);

second forcing means capable of pushing the rotor to cause the rotor to return from a closed position in which the aperture is closed (Column 2, Lines 50-55; Figure 1, Items 3 and 7a), and capable of stopping the rotor at a rotational position corresponding to the exposure aperture regulating position in cooperation with the first forcing means when the rotor is in a vicinity of the rotational position and the current to the coil is interrupted (Figure 3); and

magnetic holding means respectively disposed at plural places facing a peripheral surface of the rotor, and capable of maintaining the stopped position of the rotor by a magnetic force of the rotor, which acts from the rotor thereto, in a fully closed state of the exposure aperture even when the current to the coil is interrupted (Column 2, Lines 64-67).

Therefore, it can be seen that SanGregory et al. lacks:

magnetic holding means capable of maintaining the stopped position of a rotor in a fully opened state.

6. Arisaka et al. teaches holding shutter/diaphragm blades in both an open and close position to save power to allow the unit to increase the number of pictures the camera can take (English Translation of Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the

Art Unit: 2612

shutter/diaphragm system of SanGregory et al. with the holding means of Arisaka et al. to achieve a low power shutter system that allows a camera to take more pictures than prior art cameras.

[claim 2]

7. In regard to claim 2, note that the magnetic holding means of Arisaka et al. comprises at least on first magnetic holding material member (Figure 3, Item 1d) disposed so that, under the state in which the exposure aperture is fully opened, the rotor is rotated by the magnetic force in a direction in which the shutter blade is moved to open the exposure aperture, and at least one second magnetic material member (Figure 3, Item 1c) disposed so that, under the state in which the exposure aperture is closed, the rotor is rotated by the magnetic force in a direction in which the shutter blade is moved to close the exposure aperture.

[claim 3]

8. In regard to claim 3, note that the magnetic holding means of Arisaka et al. comprises at least one defective portion (Figure 3) formed in a yoke (Figure 3, Item 6a) which is disposed so as to surround the peripheral surface of said rotor, and provided at a place where the rotor is rotated by the magnetic force in a direction in which said shutter blade is moved to open said exposure aperture, and positioned so that said rotor is rotated by the magnetic force in a direction in which said shutter blade is moved to open said exposure aperture, under the state in which said exposure aperture is fully opened, and positioned so that said rotor is rotated by the magnetic force in a direction in which said shutter blade is moved to close said exposure aperture, under the state in

Art Unit: 2612

which said exposure aperture is closed.

[claim 5]

9. In regard to claim 5, note that the shutter blades (Figure 1, Items 1 and 2) of SanGregory et al. are two shutter blades actuated by the driving pin (Column 2, Lines 50-55) so as to relatively operate.

[claim 6]

10. In regard to claim 6, note that SanGregory et al. in view of Arisaka et al. discloses all limitations except for a first forcing means comprising a diaphragm actuating member connected to a diaphragm blade and rotatably attached to a shutter base plate, and a first spring engaged with the with the diaphragm actuating member so that the diaphragm actuating member is able to rotate following the driving pin.

11. However, it is well known in the art that such a spring system can be used to drive shutter/diaphragm blades instead of using complicated motors to supply the driving force for the shutter, one such example is given in Matsumoto (US 5,446,514). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a spring system instead of the actuator of SanGregory et al. to provide the driving force for moving the shutter/diaphragm blades.

[claim 8]

12. In regard to claim 8, note that Arisaka et al. discloses a shutter device wherein when said rotor is rotated from an initial position, energization of said coil is performed once so that said rotor rotates in a direction in which said shutter blade performs an opening operation of opening said exposure aperture, and thereafter, energization of

Art Unit: 2612

said coil is performed so that said rotor rotates in an opposite direction. The office notes that since the driving means of Arisaka et al. is only energized when moving between the open and closed conditions, and not while holding the shutter in either state (Paragraph 0005), the claimed driving system is inherent.

13. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over SanGregory et al. (US 5,432,576) in view of Arisaka et al. (JP 10221740A) as applied to claim 1 above, and further in view of Tsuzuki et al. (US 6,086,267).

[claim 4]

14. In regard to claim 4, note that SanGregory et al. in view of Arisaka et al. discloses all limitations except for the shutter/diaphragm blades being a single blade smaller than that of the exposure aperture.

15. Tsuzuki et al. discloses a single blade shutter/diaphragm (Column 6, Lines 9-11; Figure 1) system which uses less hardware than the system of SanGregory et al. in view of Tsuzuki et al. due to a single blade performing the functions of the two blades of SanGregory et al. in view of Tsuzuki et al. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the single blade shutter/diaphragm system of Tsuzuki et al. with the system of SanGregory et al. in view of Arisaka et al. to reduce the amount of necessary hardware.

Allowable Subject Matter

Art Unit: 2612

16. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

[claim 7]

17. In regard to claim 7, the prior art does not teach or fairly suggest a shutter with a second forcing means that is a spring wound around the rotation shaft of the diaphragm actuating member and having one end engaged with the diaphragm actuating member and the other end engaged with the driving pin that is capable of opening an exposure aperture in the manner claimed in claim 1.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art further shows the current state of the art in regard to camera shutter systems.

- | | | |
|----|----------------|--------------|
| a. | Ikari et al. | US 4,487,493 |
| b. | Dowe | US 5,337,110 |
| c. | Akimoto et al. | US 5,602,610 |
| d. | Yaginuma | US 6,343,881 |

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J Henn whose telephone number is (703) 305-

Art Unit: 2612

8327. The examiner can normally be reached on M-F 7:30 AM - 5:00 PM, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TJH
2/17/04


NGOC-YEN VU
PRIMARY EXAMINER